UNITED STATES PATENT AND TRADEMARK OFFICE

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YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

EXAMINER
MA, TIZE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 January 2009</u>.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>11-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>11-19</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 1/9/2009 have been fully considered but they are not

persuasive.

2.   Regarding claim 11, the applicant argues that, (1) the claim recites "displaying

the frame with revised relative sizes of the second geometrical figures at selected levels

of the tree-map." Thus, the claim actually does not re-display the entire tree-map.

Instead, in the claim only displays the frame with revised sizes at selected levels of the

tree-map. (2) Further, Wattenburg, col. 4, lines 25-47 does not discuss the re-display of

data "when a change in the first parameter occurs at one of the nodes of the tree-map,

recalculating values." Instead, the cited text has to do with "the initialization process."

(See Wattenburg, col. 4, lines 46- 47) Thus, what is discussed is the display of the

entire tree as the Office acknowledged. Not, as required by the claim "displaying the

frame with revised relative sizes."

3.   The examiner disagrees. (1) "Displaying the frame with revised relative sizes of

the second geometrical figures at selected levels of the tree-map." can be interpreted as

displaying the entire frame with some changes, not necessarily displaying only the

changed parts. Regarding "selected levels of the tree-map", Wattenburg teaches

selecting different zoom levels of the tree-map, e.g. Figs. 3 and 4. Therefore

Wattenburg shows the claimed limitations. (2) Wattenburg, col. 4, lines 25-47 does

describes "the initialization process." However, it also describes calculating the total

weight of all sectors, dividing the display areas, etc. such initialization process is the

calculating process before any displays. If the data is changed, the "initialization

process" is applied as well. For example, when the data is changed, the total weight

may need to be re-calculated (column 13, line 45-52). In that case, the process is

equivalent to re-calculating the parameters of the figures. It would be part of "displaying

the frame with revised relative sizes." Again, Wattenburg shows the claimed limitations.

In summary, the combination of Wattenburg and Purplemath-Ratio renders claim 11

obvious to one of ordinary skill in the art at the time of invention was made. Therefore

claim 11 remains rejected.

4.   Claim 17 recites the similar features as claim 11. Claim 17 remains rejected

based on the same rationale as in claim 11 above.

5.   Regarding claim 14, the applicants argue that, the cited text, by the Office Action,

does not disclose that the information is "conveyed within the displayed frames at

different tree-map levels." The cited text merely talks about display views without

equating these to tree levels.

6.   The examiner disagrees. In the cited paragraph in Wattenburg, it states "Thus,

for each region or company the user can simply examine its graphical size and color to

decipher certain relevant information or performance data on the respective company.

In one embodiment, the size of a region corresponds to the market capitalization of the

company represented by that region and the color corresponds to its recent

performance from a predetermined date. For example, the color may indicate a positive

or negative price change from the previous market day or from its 12-month low, etc."

Obviously, the colors and sizes of the graphics convey the information of the companies

or the sectors. It is the same as features in the instant claim. Therefore claim 14

remains rejected.

7.   Regarding claim 16, the applicants argue that, nothing in the cited text, by the

Office Action, states that the colors are changed after the frame is filled but before the

frame is displayed. Instead, the frame could just as likely be rendered after the color is

chosen.

8.   The examiner disagrees. "Comprising the step of revising the colors of the

second geometrical figures following the step of completely filling the frame and before

displaying the frame" is interpreted as that color of the figures can be changed.

Wattenburg, as shown in the cited paragraph, shows the capability of the color

manipulation. The detail rendering method is not relevant. Therefore claim 16 remains

rejected.

9.   The newly added claim 19 is rejected over the combination of Wattenburg and

Purplemath-Ratio, as applied to claim 11, and further in view of Novak et al (U.S.

6,791,581 B2).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

12.   Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wattenberg (US. 6,583,794 B1), and in view of Purplemath-Ratio (NPL: Purplemath --

Your Algebra Resource Ratio & Proportion, 10/01/2002:

http://web.archive.org/web/20021001163811/www.purplemath.com/modules/ratio.htm,

hereinafter as Purplemath-Ratio).

13.   Regarding claim 11, the applicant admits that " In a method for displaying

parameters of a set of companies that have been tree-mapped into plural levels wherein

the companies are nodes at one level of the tree-map and nodes at subsequent levels

up the tree-map from the one level are groups of companies sorted by predetermined

characteristics, wherein the method includes displaying a frame that has a shape of a

first geometrical figure and has plural second geometrical figures within the frame,

showing relative values of a first parameter of the companies at selected tree-map

levels as relative sizes of the second geometrical figures within the frame and showing

relative values of a second parameter of the companies at the selected tree-map levels

as different colors of the second geometrical figures within the frame" is prior art. It is

stated in the lines 4-5 on page 7 of the specification. In addition, Wattenberg also

teaches all these features (column 3, lines 1-20, lines 34-40; column 4, lines 25-47.

Stock market is divided into sectors. Each sector comprises a number of companies.

The whole market is visualized as a rectangle. The rectangle is divided in to smaller

rectangles, which represent sectors. Each rectangle which represents a sector is further

divided into even smaller rectangles to represent companies. The sizes and colors of

the rectangles convey information about the sectors and companies, e.g., market caps,

volumes, or price changes).

14.   The applicant claims the improvement wherein the method further comprises the

steps of:

    when a change in the first parameter occurs at one of the nodes of the tree-map,

recalculating values of the first parameter for ancestors of the one node at each level in

a direction up the tree-map starting at the one node until a highest tree-map level is

reached without recalculating values of the first parameter for nodes other than the one

node and ancestors of the one node;

    completely filling the frame with the second geometrical figures by reapportioning the

relative sizes of the second geometrical shapes of nodes other than the one node and

ancestors of the one node based on the recalculated value of the first parameter of the

one node and of ancestors of the one node; and

    displaying the frame with revised relative sizes of the second geometrical figures at

selected levels of the tree-map to a user of information conveyed by the first and

second parameters.

15.   The improvement is a process of re-displaying the tree map when there is a

change in a parameter of a rectangle, e.g., a market cap change of a company. In order

to analyze the difference between Wattenberg and the instant claim, it is useful to

demonstrate what operations would be the most obvious and natural according to

Wattenberg when such change occurs. It is described as following using the stock

market scenario. Assume that company D which is in the sector A has a change in its

market cap, and the rest of the market remains unchanged. As the size of rectangle

representing D would be changed, according to Wattenberg, all rectangles which

represent the sectors and companies would have to be re-sized and re-drawn since the

size of each rectangle is determined by its weight relative to the weight of total market

(column 4, lines 25-47. Notes: "Displaying the frame with revised relative sizes of the

second geometrical figures at selected levels of the tree-map." can be interpreted as

displaying the entire frame with some changes, not necessarily displaying only the

changed parts. Regarding "selected levels of the tree-map", Wattenburg teaches

selecting different zoom levels of the tree-map, e.g. Figs. 3 and 4. (2) Wattenburg, col.

4, lines 25-47 does describes "the initialization process." However, it also describes

calculating the total weight of all sectors, dividing the display areas, etc. such

initialization process is the calculating process before any displays.). However,

Wattenberg does not explicitly teach the calculation. With the help of Purplemath-Ratio,

the relative weight of a company or a sector to the entire market can be expressed as a

ratio of the market cap of the company or the sector to the market cap of the entire

market, which is $m/(m+n)$ *X (See lines 36-37, geese in birds). When applied to the

above scenario, where m would be the market cap (first parameter) of D, n would be the market cap of rest of the market, X would be the total area of the root rectangle. m+n can be rewritten as Pa + Pb +Pc, assuming there are 3 sectors and Pa, Pb, Pc are the market caps of the sectors. Since Pb and Pc remain unchanged, there is no need to re-calculate them. Only Pa and Pa+Pb+Pc need to be re-calculated. This is exactly the first of the instant claim. Then the above ratio corresponding each company and sector is calculated, the size of every rectangle is obtained. This is exactly the second step of the instant claim. Then the entire tree map is re-drawn, which is the third step of the instant claim.

16.   Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method as shown in Wattenberg according to Purplemath-Ratio by only calculating the quantities which have changed due to the change of one of the parameters of a node, and calculating the ratios which determine the sizes of the rectangles if such a change occurs for the benefit of minimizing the required computation.

17.   Regarding claim 12, Wattenberg teaches wherein the first and second parameters are selected from the group of parameters consisting of a value of a company, a fraction of a trading volume, and a change of share price (column 3, lines 55-59).

18.   Regarding claim 13, Wattenberg teaches wherein the displaying step includes displaying relative values of companies or groups of companies as the relative sizes of the second geometrical figures and displaying a change of share price of the companies

or groups of companies as colors of the respective second geometrical figures (column 3, lines 1-20; column 4, lines 37-40; companies, sectors, determining physical size of each display sector).

19.   Regarding claim 14, Wattenberg teaches further comprising the step of visualizing sizes and share price changes of companies and groups of companies on a stock exchange based on the information conveyed within the displayed frames at different tree-map levels (column 3, lines 34-45; sizes and colors of the regions convey financial info).

20.   Regarding claim 15, Wattenberg teaches wherein the first and second geometrical figures are rectangles or squares (column 3, line 2, rectangles).

21.   Regarding claim 16, Wattenberg teaches further comprising the step of revising the colors of the second geometrical figures following the step of completely filling the frame and before displaying the frame (Fig. 9; column 16, lines 16-23. Wattenberg provides a facility of manipulating color anytime. Such a manipulation can be done after any change and before re-display the frame).

22.   Claims 17-18 are rejected based on the same rationale as to claims 11 and 15-16 since claims 17-18 are the re-combinations of the limitations in claims 11 and 15-16 and the limitations are individually addressed.

23.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wattenberg, and in view of Purplemath-Ratio, as applied to claim 11 above, and further in view of Novak et al (U.S. 6,791,581 B2).

24.   The combination of Wattenberg and Purplemath-Ratio remains applied to claim 11 above. However, the combination does not explicitly show wherein only the value for the ancestors of the node in the direction towards higher levels based on the node in which the change has taken place is recalculated. It would have been obvious to one of ordinary skill in the art that only necessary calculation should be performed. In other words, un-necessary calculation should not be performed. Novak et al teaches wherein only the value for the ancestors of the node in the direction towards higher levels based on the node in which the change has taken place is recalculated (column 19, lines 14-30. Re-calculating region of the node whose attribute is changed, and the regions of its ancestors. No recalculation is performed on nodes that are not affected by the change.)

25.   Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method as shown in the combination of Wattenberg and Purplemath-Ratio by only re-calculating the value for the ancestors of the node in the direction towards higher levels based on the node in which the change has taken place as shown in Novak et al for the benefit of minimizing the required computation.

Conclusion

26.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to TIZE MA whose telephone number is (571)270-3709.

The examiner can normally be reached on Mon-Fri 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Xiao M. Wu can be reached on 571-272-7761. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/XIAO M. WU/

Supervisory Patent Examiner, Art Unit 2628